WHAT IS WITCHES’ BROOM DISEASE?

Witches’ Broom is a disease of cocoa caused by the fungus *Moniliophthora perniciosa* on cocoa. The infection causes numerous broom-like shoots to sprout, thus the term “Witches’ Broom”.

Brooms when formed are alive and green, but eventually die giving the characteristic dry Witches’ Broom attached to the tree.

In the dry season, the fungus cannot grow or multiply. In the wet season however, the fungi in the dead brooms multiply. The spores produced are spread by air currents and infect young cocoa tissue. All actively growing parts of the plants can be affected for example:

a) vegetative shoots on fan branches  
b) flower cushions  
c) pods.

WHAT ARE THE SYMPTOMS OF WITCHES’ BROOM DISEASE?

i) Symptoms on Vegetative Branches:-
   a) Fan brooms: Fan Brooms are produced on fan branches either at the tip of a shoot or on side shoots (*figure 1*).

ii) Symptoms on Flower Cushions:-
   a) Flower cushions produce vegetative shoots resembling brooms.

   b) Star blooms: Larger than normal flowers called star blooms, “Star blooms” appear on flower cushions. These do not produce pods.

iii) Symptoms on Pods:-
   a) Distorted pods: Pods that are infected at a very young age appear distorted (*figure 3*).
iv) **Effect on Trees:-**
Cocoa trees infested with Witches’ Broom disease are weakened. This leads to losses in yields.

**HOW CAN WITCHES BROOM DISEASE BE CONTROLLED?**
Witches’ Broom disease of cocoa can be managed by using measures to reduce moisture in the field.

1. Remove and burn all diseased brooms, pods and flower cushions once per year, preferably at the end of the dry season (May).

   **NOTE:** In the removal exercise, make cuts about 6 cm (2.36 inches) into the healthy tissue of the tree.

2. Use recommended spacing.

3. Use recommended Trinidad Selected Hybrids (TSH) varieties with high yielding characteristics and known tolerance to the disease.

4. Control weeds.

5. Carefully monitor the shade conditions within the canopy. Shade helps by slowing down growth and therefore reduces the amount of tissues available for infection.

6. Construct and maintain effective drainage since too much moisture increases fungal growth.

7. Apply a copper based fungicide to protect pods as recommended.

8. Prune trees to prevent excessive vegetative growth.

---

**List of Cocoa Factsheets in this Series:**
1. Production of Cocoa - Coc/TT: Ag Ext 13: 01
2. Pruning of Cocoa
3. Shade Management in Cocoa Production - Coc/TT: Ag Ext 13: 03
5. Black Pod Disease of Cocoa - Coc/TT: Ag Ext 13: 05
6. Witches’ Broom Disease of Cocoa - Coc/TT: Ag Ext 97: 06
8. Cocoa Seedling Production - Coc/TT: Ag Ext 98: 08

---

"All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted in any form, or by any means reproduced without permission in writing, of the Ministry of Food Production."